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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,699	01/08/2002	Thad Heckman	6210-000005	5455
7590	04/07/2004		EXAMINER	
Bryan K. Wheelock Harness, Dickey & Pierce, P.L.C. Suite 400 7700 Bonhomme St. Louis, MI 63105			NGUYEN, SANG H	
			ART UNIT	PAPER NUMBER
			2877	
			DATE MAILED: 04/07/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/041,699	HECKMAN, THAD	
	<b>Examiner</b>	<b>Art Unit</b>	
	sang nguyen	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 07 January 2004.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 5-23 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 5-23 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### ***Response to Amendment***

The present Office action is made in response to amendment filed on 01/07/04. It is noted that the present application contains claims 5-23 and claims 1-4 have been canceled by Amendment filed on 01/07/04.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “**a modeling area and a non-modeling area**” and “**at least one window**” in claim 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The phrase "**a modeling area and a non-modeling area**" and "**at least one window**" of claim 13 are not described in the specification.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 4, 6-7, 9, and 11-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoadley (U.S. Patent No. 4,089,608).

Regarding claims 4, 9, 13-16, and 19-20; Hoadley discloses apparatus and method for depicting contour lines on the surface of a model, comprising:

- a generally horizontal work surface is horizontal beam member (30 of figure 1) for supporting a model (16 of figure 1) on a circular table (13 of figure 1),
  - at least one vertical sidewall considered to be a long upright tube (40 of figure 1) at least partially surrounding the horizontal work surface (30 of figure 1 and col.7 lines2-6) of the supported model (16 of figure 1),
    - a reflector considered to be a three side prism (50 of figure 1) having a mirror back surface (55 of figure 1) on at least a portion of the interior sidewall (40 of figure 1), and

• at least one laser source (43 of figure 1) for projecting a fan shape beam considered to be a sheet of light beam (57 of figure 1 or 123 of figure 9) across the horizontal work surface (30, 13 of figure 1) of the supporting model (16 of figures 1 and 9) to the reflector to project contour lines (17 of figures 1 and 9) on at least some surfaces of a model (16 of figure 4) on the horizontal work surface (13, 30 of figure 1) that do not directly face the laser source (43 of figure 1; and col.3 line 23 to col.4 line 19 and col.6 lines 33-68; and claim 1). See figures 1-16.

Regarding claims 6, 12, 18, and 21; Hoadley discloses a plurality of laser sources (43, 28

of figure 1) positioned at different heights to the horizontal work surface (30 of figure 1).

Regarding claims 7, 11, 17, and 22; Hoadley teaches that the fan shaped beams (123 of figure 9) of each the laser sources are equally vertically spaced (figure 9 and col.7 lines 2-6).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 10, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoadley (U.S. Patent No. 4,089,608) in view of Pipitone et al (U.S. Patent No. 5,838,428).

Regarding claims 8, 10, and 23; Hoadley discloses all of features in claimed invention except for the color of adjacent fan shaped beams are different. However, Pipitone et al teaches that it is known in the art to provide the color of adjacent fan shaped beams are different (figure 1) on the object (2 of figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify apparatus and method for depicting contour lines on the surface of a model of Hoadley with the color of adjacent fan shaped beams are different as taught Pipitone et al for the purpose of projecting color of light beams on the object in different positions.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mellecker (4,856,997) discloses architectural scale model viewer and method for using; Nishio (4,571,835) discloses method of a depicting a solid; or Winzer (3,851,961) discloses light projection apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sang Nguyen/SN

March 30, 2004



Frank G. Font  
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